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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/253,153	02/19/1999	ALAN W SCHWABACHER		5283

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KAROLINE K M SHAIR  
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EXAMINER

SHIBUYA, MARK LANCE

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/253,153

**Applicant(s)**

SCHWABACHER, ALAN W

**Examiner**

Mark L. Shibuya

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 47-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 47-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/26/04 & 8/6/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Status of the Claims***

1. Claims 47-58 are pending. Applicant in the amendment, filed 8/6/04, canceled claims 1-46. Claims 47-58 are examined.
2. It is reiterated for the record that applicant's petition reviving the instant application was granted; the Decision on Petition was mailed 9/13/04.
3. Rejections of claims 1-7 and 37-46 under 35 U.S.C. 112, first paragraph, for new matter, and under 35 U.S.C. 112, second paragraph, as set forth in the final rejection mailed 2/11/2003, are withdrawn as rendered moot by applicant's cancellation of claims 1-46, filed 8/6/04.
4. Rejection of claims 1-7 and 37, 38 and 42 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Browne et al. (Anal. Chem. 1996), as set forth in the final rejection mailed 2/11/2003, is withdrawn as rendered moot by applicant's cancellation of claims 1-46, filed 8/6/04.
5. Rejection of claims 1-7 and 37-46 as provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 6-13 and 30-50 of copending Application No. 09/535,300, as set forth in the final rejection mailed 2/11/2003, is withdrawn as rendered moot by applicant's cancellation of claims 1-46, filed 8/6/04.

***Continued Examination Under 37 CFR 1.114***

6. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/6/04 has been entered.

### ***Priority***

7. It is noted that the instant application is the parent of co-pending application 09/535,300, which claims priority as a continuation-in-part of the instant application. It is noted further that the neither the inventive entities, nor the assignees, of the two applications are the same in either case.

### ***Information Disclosure Statement***

8. Applicant has provided two identical Information Disclosure Statements, filed 1/26/04 and 8/06/04.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 47-58 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 53-74 of copending Application No. 09/535,300. Although the conflicting claims are not identical, they are not patentably distinct from each other because an array comprising a support and a combinatorial library of chemical compounds attached to the support in a linear arrangement, and variations thereof, as in claims 47-58 of the instant application, are obvious, as the species anticipates the genus, over an array comprising a support and a combinatorial library of chemical compounds attached to the support in a linear arrangement, wherein the support is an optical fiber, wherein said compounds are peptides or proteins, and wherein the optical fibers are wrapped about a geometric shape, as in claims 53-74 of copending Application No. 09/535,300.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 47, 50-54, 56 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These rejections are necessitated by applicant's amendments to the claims, filed 8/6/2004.

Claims 47, 57 and 58, and their dependent claims, recite the language "can be generated" which renders the claims vague and indefinite, because it is unclear whether

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the members of a combinatorial library are generated via the method steps as recited in the claimed invention or by some other way. Claim 47 recites the language "a larger number of products is produced than different chemical reactions are performed", which renders the claims vague and indefinite, because number of products can be taken to have more than one meaning: the actual number of products produced and the number of types or kinds of products produced.

Claim 51, and its dependent claims, recite the language "related to one another by synthetic history" which renders the claims vague and indefinite, because the term is not defined by the claim, the specification does not define the term, and one of skill in the art would not be reasonably apprised of the metes and bounds of the invention. It is unclear as to how the structures of chemical compounds are "related" by "synthetic history", *i.e.*, whether they are related by structure or related by process of making.

***Claim Rejections - 35 USC § 112, First Paragraph***

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 51-54, 56 and 58 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. This is a *New Matter Rejection*.

This rejection is necessitated by applicant's amendments to the claims, filed 8/6/04.

13. Claim 51, and its dependent claims, recites the limitation that the "members of the library are related to one another by synthetic history" and wherein each member of a first subset is separated from each "next closest member by a first distance." There does not appear to be specific support for this limitation in the specification as originally filed. Applicant should point, with particularity, to where in the specification support for the amendment may be found.

#### *Response to Arguments*

14. Applicant, in the arguments, filed 8/6/04, stated that newly filed claim 50 [actually claim 50] would find support for a library of chemical compounds whose members "are related to one another by synthetic history" and wherein each member of a first subset is separated from each "next closest member by a first distance", as claimed, in the parent application 09/253,153, e.g., p. 4, lines 14-18; p. 7, line 26-p. 8, line 17; p. 9, line 25-p. 11, line 3; p. 18, line 1-p. 25, line 6. However, the examiner has been unable to find specific support for these limitations regarding synthetic history and next closest member by a first distance.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 47-58, are rejected under 35 U.S.C. § 102(e) as being anticipated by Stimpson (US 6,037,186).

Claims 47-58 are drawn to an array comprising a support and a combinatorial library of chemical compounds attached to the support in a linear arrangement, and variations thereof.

Stimpson at col. 1, lines 41-51, col. 4, line 66-col. 5, line 3, and at col. 7, lines 61-65, disclose combinatorial peptide compounds and combinatorial libraries. These compounds and libraries form arrays of protein or DNA compounds linearly arranged in arrays on materials that include covalent attachment to nylon or nitrocellulose membranes or other materials, as disclosed at col. 3, lines 35-col. 4, line 45, which are then rolled around a rod shaped support to form a tight spiral of membrane material or bundles (see, e.g., Figure 2C). These rod elements may be wrapped on a spool, as disclosed at col. 4, lines 59-66.

16. Claims 47-54, 57 and 58 rejected under 35 U.S.C. 102(b) as being anticipated by Matson et al., US 5,429,807.

Matson et al., US 5,429,807, throughout the patent, and especially at the abstract, Figures 1-7, col. 1, line 28-col 2, line 17, col. 2, lines 54-56, col. 3, lines 35-44, col. 4, line 60-col. 5, line 8, col. 5, line 29-col. 6, line 14, teach combinatorial libraries of



DNA attached in a linear, "one-dimensional", arrangement to a solid support that includes a sheet of polypropylene, wherein that attachment can be through a covalent bond, as evidenced by Coassin et al., US 5,554,501 (at col. 11, line 40-col. 12, line 38).

Matson et al. states:

Biopolymers are synthesized on the surface of the material that is exposed to the reagents flowing through the open channel, having a specific sequence which depends on the particular sequence of reagents supplied to the particular channel. A parallel one-dimensional array of biopolymers are thus formed on the support material, where each element of the array contains a population of biopolymers having identical sequence.

Matson et al., US 5,429,807, at col. 1, lines 53-61. Thus Matson teaches members of a library that are related to one another. Matson states:

Matson et al., at col. 5, lines 29-64, teach combinatorial DNA synthesis on a derivatized sheet mounted or wrapped on a geometrical block comprising a plurality of open channels. Matson et al., at col. col. 5, lines 62-64, state "[t]hus, the channels can be used to synthesis polynucleotides of lengths and sequences different from one another." Matson et al., state:

It is noted that the term "dimension" used herein does not refer to the physical size and shape of the array or matrix. Rather it refers to the direction of the ordered arrangement of the discrete array elements. Therefore, one-dimensional (Mx1) array refers to an array having discrete elements arranged in a single direction irrespective of the size of the individual elements; and two-dimensional array refers to an array having discrete elements arranged in two directions, e.g. a MxN matrix, or an irregular matrix of discrete elements distributed over an area.

Matson et al., US 5,429,807, at col. 6, lines 6-14.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 48, 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Matson et al.**, US 5,429,807, in view of **Stimpson** (US 6,037,186).

Claims 48, 51-56 are drawn to an array comprising a support and a combinatorial library of chemical compounds attached to the support in a linear arrangement, and wherein the support is wrapped about a substrate in a spiral.

**Matson et al.**, US 5,429,807, throughout the patent, and especially at the abstract, Figures 1-7, col. 1, line 28-col 2, line 17, col. 2, lines 54-56, col. 3, lines 35-44, col. 4, line 60-col. 5, line 8, col. 5, line 29-col. 6, line 14, teach combinatorial libraries of DNA attached in a linear, "one-dimensional", arrangement to a solid support that includes a sheet of polypropylene, wherein that attachment can be through a covalent bond, as evidenced by Coassin et al., US 5,554,501 (at col. 11, line 40-col. 12, line 38).

Matson does not teach an array linearly arranged on a support, wherein the support is wrapped about a substrate in a spiral.

**Stimpson**, at col. 1, lines 41-51, col. 4, line 66-col. 5, line 3, and at col. 7, lines 61-65, disclose combinatorial peptide compounds and combinatorial libraries. These compounds and libraries form arrays of protein or DNA compounds linearly arranged in arrays on materials that include covalent attachment to nylon or nitrocellulose

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membranes or other materials, as disclosed at col. 3, lines 35-col. 4, line 45, which are then rolled around a rod shaped support to form a tight spiral of membrane material or bundles (see, e.g., Figure 2C). These rod elements may be wrapped on a spool, as disclosed at col. 4, lines 59-66.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, to have taken linearly arranged arrays on sheets, as taught by Matson et al., and rolled them around a rod shaped support to form a tight spiral of membrane material or bundles, as taught by Stimpson.

One of ordinary skill in the art would have been motivated to have rolled linearly arranged arrays around a rod shaped support to form a tight spiral of membrane material or bundles, because Stimpson, at col. 4, line 66-col. 5, line 3 teaches that the bundles so formed for storage.

### ***Conclusion***

18. No claims are allowed.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Shibuya whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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